CHAPITRE 11

The Chinese Intellectual Diasporas

How can the Chinese Intellectual Diasporas Bridge their Host and Home Countries as well as Help their Home Country Integrate into the International Community

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General Introduction at Macro Level

Overseas Study

The Chinese government's decision to send thousands of students for overseas study represents an historical continuity rather than a radical departure in modern China's cultural policy (modern history in China is considered from 1840). For over a century, with the sole exception of the period from 1967 to 1974, Chinese students have been studying abroad, frequently in large numbers. The roles played by the generations (I divided them into five generations in my publication, Guo, 1998) of returned Chinese students educated abroad in the social, economic, scientific and political modernization, in general, and the educational modernization, in particular, have been historically important. For example: "the first generation" overthrew the Qing Dynasty and opened the modern educational system in China; "the second generation" went along "the third route" leading to the establishment of the People's Republic of China in 1949, thus changing China's future and deciding its fate as well; "the third generation" has made great contributions to the development of the scientific and educational cause in China; and "the fourth generation", gradually moving away from the Soviet ideas and model introduced by themselves in the past, has reopened the door to the outside world and is implementing the reforms along the Western lines in many cases.

In contrast to earlier periods, today's overseas study – "the fifth generation" – has five striking features:

First is its vast scale and scope

During the period from 1978 to the end of 2001, about 380,000 students, 32 times as much as the figure (11,900) in the 28-year period from 1950 to 1977 and 3 times as the figure (130,000) in the over 100-year period from 1872 to 1978, respectively, went to more than 103 countries and regions for overseas study, with the United States as their largest host country[1]. More than half of them were enrolled in American universities. Table 1 clearly shows the dramatically increasing enrollment and ratio of Chinese students among total foreign students in American universities from 1980 to 2000: the enrollment increased 19.7 times from 2,770 to 54,466 while the proportion rose from less than 0.9 percent to 10.6 percent. In comparison, the total number of foreign students in the United States increased from 311,880 to 514,723 or by only 65 percent in the same period. Therefore, students from China became by far the fastest growing community on American campuses. Although Chinese students have, in general during 1994 and 1996, been the second largest foreign student population after Japan, during the period of 1989 and 1994 they took the lead in total foreign student enrollment in America.

Table 1: Chinese Students Enrolled in American Universities: 1980-81 to 1999-00

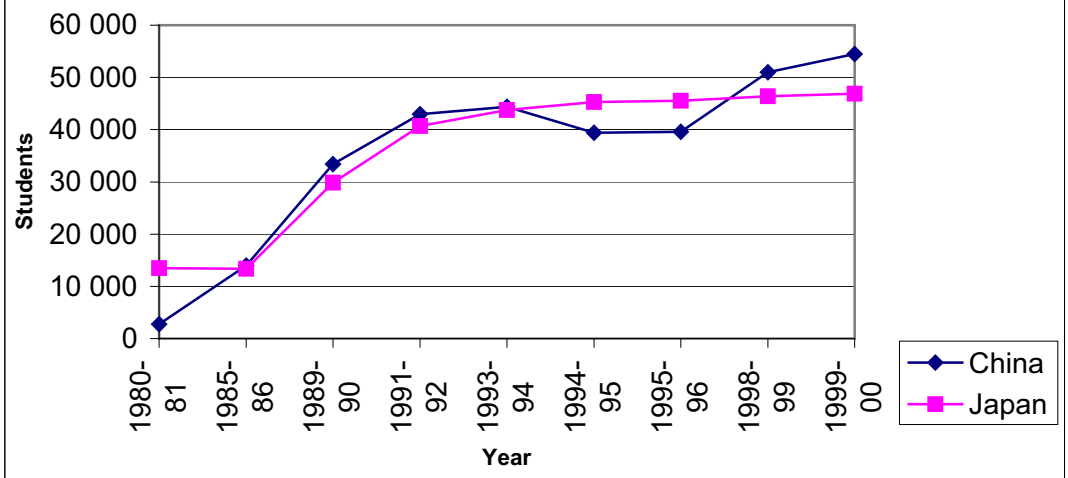
	1980-81		1985-86		1989-90		1991-92		1993-94		1994-95		1995-96		1998-99		1999-00	
	No	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Total	311880	100	343780	100	386850	100	419590	100	449704	100	452635	100	453787	100	490933	100	514723	100
China	2770	0.9	13980	4.1	33390	8.6	42940	10	44381	9.9	39403	8.7	39613	8.7	51001	10	54466	10.6
Japan	13500	4.3	13360	3.9	29840	7.7	40700	9.7	43770	9.7	45276	10	45531	10	46406	9.9	46872	9.1

Source: 1) U.S. Department of Education, *Digest of Education Statistics 1996 and 1997*, p. 450 and 456. 2) Institute of International Education, *Open Doors*, 1999 and 2000.

[1] http://www.wenxuecity.com/BBSview.asp?SubID=newsdirect&MsgID=9040 (2/5/02) and http://www.wenxuecity.com/BBSview.asp?SubID=newsdirect&MsgID=10375 (4/15/02)

The relative decline of Chinese students in enrollment after 1994 was affected by the situation in China where the second reform tide after 1992 led to more opportunities in both the job market and graduate studies at home. As a result, the wave of overseas students cooled down to some extent in those years. However, starting from 1998, Chinese students again retook the first place (See Figure 1).

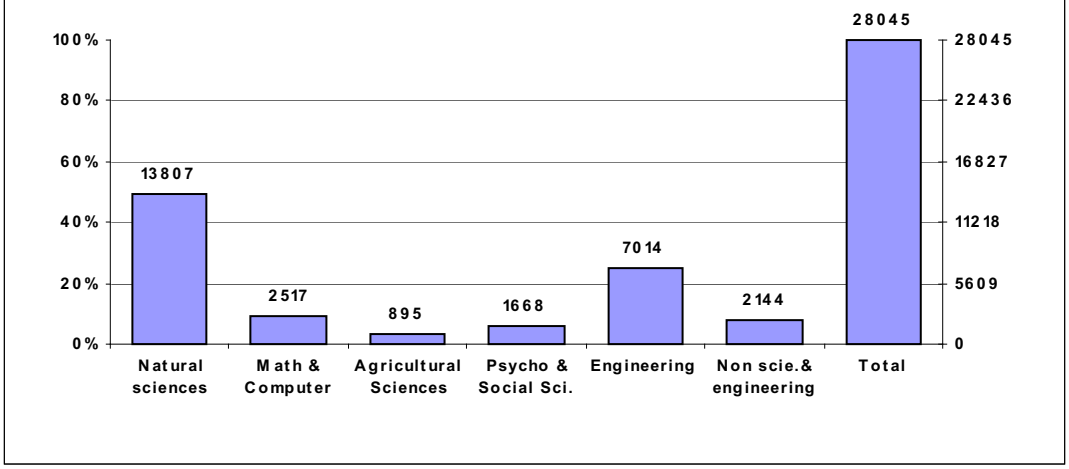
Figure 1: Chinese and Japanese Students Enrolled in American Universities : 1980-81 to 1999-2000



The second characteristic is its advanced educational level and S&T Bias

The majority of Chinese students go abroad for graduate rather undergraduate studies. For example, among those Chinese students who were enrolled in American universities in 1995-96 and 1997-98 academic year, graduate students accounted for more than 80 percent and 78 percent, respectively (NSB, Science and Engineering Indicators 1998 and 2002). Graduate training, especially at the doctoral level, is associated with research. The data in Figure 2 show that, from 1988 to 2000, American universities granted Chinese students 28,045 doctoral degrees, with 92.5 percent (25,901) in S&E fields. Many Chinese graduates continued their research activities as postdoctoral students after earning their Ph.D. degrees.

Figure 2:
Chinese Ph.D. Degrees Earned from U.S. Universities, by Field: 1988-2000



Source: National Science Foundation, Division of Science Resources Statistics, *Survey of Earned Doctorates,*
special Tabulations. 2002.

The third feature is the rise of various Chinese students and scholars organizations in North America and their role as a bridge between China and the United States

Since the mid-80s, especially after former President Bush issued the Chinese Student Protection Act in 1992, the non-returned Chinese students, scholars and professionals in the United States have been growing in numbers and influence in the American society. Over the past 10-odd years, they have formed numerous academic and professionals associations and social unions in the United States. They differ in level: some are nationwide, some are regional. Most of them are concentrated in the major metropolitan cities and hi-tech developed areas such as Washington, DC, New York City, Chicago, San Francisco, Texas, Silicon Valley, etc. These networks are defined by academic field (e.g. Chinese Association for Science and Technology), Chinese alma mater (e.g. Fudan University Alumni Association in America), and geographical origin (e.g. Beijingnese Association). In most cases, these associations play their unique roles in four areas:

1) Providing channels through which to establish and strengthenthe relationship between Chinese students and scholars here in the US, corresponding institutions and scholars in the international academic community, and particularly their colleagues back in China;

2) Mobilizing and coordinating collective as well as individual research focused on important Chinese issues and problems;

3) Providing valuable experience for their members to learn how to organize and independently run an academic organization;

4) In recent years, some organizers of these associations, using their connections with the Chinese government, industry and academic community, have been providing channels and information for their members to go back home to be employed, open a business or make investments.

Thus, these organizations serve as channels to help develop scientific collaboration and economic links between the US and China.

The fourth attribution is the inheritor and spreader of the Chinese language and culture

With increasing Chinese students and scholars remaining and settled down abroad, Chinese schools have been established and run by Chinese students and scholars everywhere in the world. Up until November 2001, there were more than 200 Chinese schools with enrolment of 40,000 in over 37 states in the USA alone (Tan, 2001). These Chinese schools play an extraordinarily important role in inheriting Chinese culture with the next generation and promoting cross-cultural exchanges.

The last but the most important issue concerning today's overseas study is the serious problem of brain drain

At least half of Chinese students are extending their stays or trying to seek permanent residency in foreign countries. According to incomplete statistics by the Chinese Embassy in the USA, in the past 20 years, more than 160,000 Chinese students came to the United States to study, and by 1998 only 30,000 of them returned home. According to data from the US National Science Foundation for the period 1990-96, the percentages of foreign S&E doctoral recipients planning to remain in the United States increased: over 68 percent planned to locate in the United States, and nearly 44 percent had firm offers to do so. The data in Table 2 show that, in 1990, 41 percent of over 1,000 Chinese S&E doctoral recipients in U. S. universities had firm plans to remain in the United States. By 1996, about 56 percent of the over 3,000 Chinese S&E doctoral recipients from U.S. universities had firm plans to remain in the United States. The underlying cause for this shift is the large number of Chinese students granted permanent residence status in the United States in 1992 following China's response to student demonstrations (NSB, 1998). The employment of these Chinese professionals and scholars ranges extensively from academic institutions, government agencies, industrial companies to post-doctoral research.

Table 2: Chinese Ph.D. Recipients from U.S. Universities Who Plan to Stay in the U.S.A. (1990-96)

1990					1991					1992					1993				
Total Ph.D. recipients	Plan to stay in U.S.		Firm plans to stay in U.S.		Total Ph.D. recipients	Plan to stay in U.S.		Firm plans to stay in U.S.		Total Ph.D. recipients	Plan to stay in U.S.		Firm plans to stay in U.S.		Total Ph.D. recipients	Plan to stay in U.S.		Firm plans to stay in U.S.	
	No.	%	No.	%		No.	%	No.	%		No.	%	No.	%		No	%	No.	%
All fields																			
1,225	725	59.2	502	41	1,919	1,523	79.4	920	47.9	2,238	1,980	88.5	1,080	48.3	2,416	2,134	88.3	1,077	44.6

1994					1995					1996				
Total Ph.D. recipients	Plan to stay in U.S.		Firm plans to stay in U.S.		Total Ph.D. recipients	Plan to stay in U.S.		Firm plans to stay in U.S.		Total Ph.D. recipients	Plan to stay in U.S.		Firm plans to stay in U.S.	
	No.	%	No.	%		No.	%	No.	%		No.	%	No.	%
All fields														
2,772	2,548	91.9	1,223	44.1	2,979	2,744	92.1	1,341	45.0	3,201	2,896	90.5	1,788	55.9

Source: NSB, *Science and Engineering Indicators 1998*, NSF, 1998 (NSB 98-1), p. A-89-A90.

Other than the clear political factor, the reasons for the rapidly growing non-returning Chinese students abroad include the relatively poor working and living conditions in China. This whole phenomenon of overseas students who do not return has severely damaged domestic teaching, research and R&D. According to the recent report of the Ministry of Education, there were 364,000 young faculty members under 40 years old working in Chinese universities in 2001, but only 13.7 percent of them – 7,000 have professorship title[2] given the scarcity of human resources in the country and its ambitious economic development program, such a large outflow of high-level specialized personnel represents a severe brain drain problem for China (Cao, 1996).

How to Turn Brain Drain into Brain Gain?

Most Third World countries have experienced brain drain for a long time. However, the past 20 years saw some changes in this phenomenon. In some Asian countries and regions including China, the reverse flow of foreign-educated students has been making it possible to turn brain drain into brain gain.

The phenomena of study abroad and international mobility of scientists and engineers in China are correlated with each other. Both of them have been affected by many societal factors. Of the many factors affecting the movement of overseas students and scholars, economy always plays a critical role. South Korea and Taiwan had a similar problem of brain drain before the mid-1980s. However, when their per capita GNP reached about US$4,000, their overseas students and scholars started to flow back home. Table 3 shows a recent study of foreign doctoral recipients working in the United States (Johnson, 2000).

[2] http://www5.chinesenewsnet.com/cgi-bin/newsfetch.cgi?unidoc=big5&src=SocDigest/Technology/can-181389.html (4/25/02)

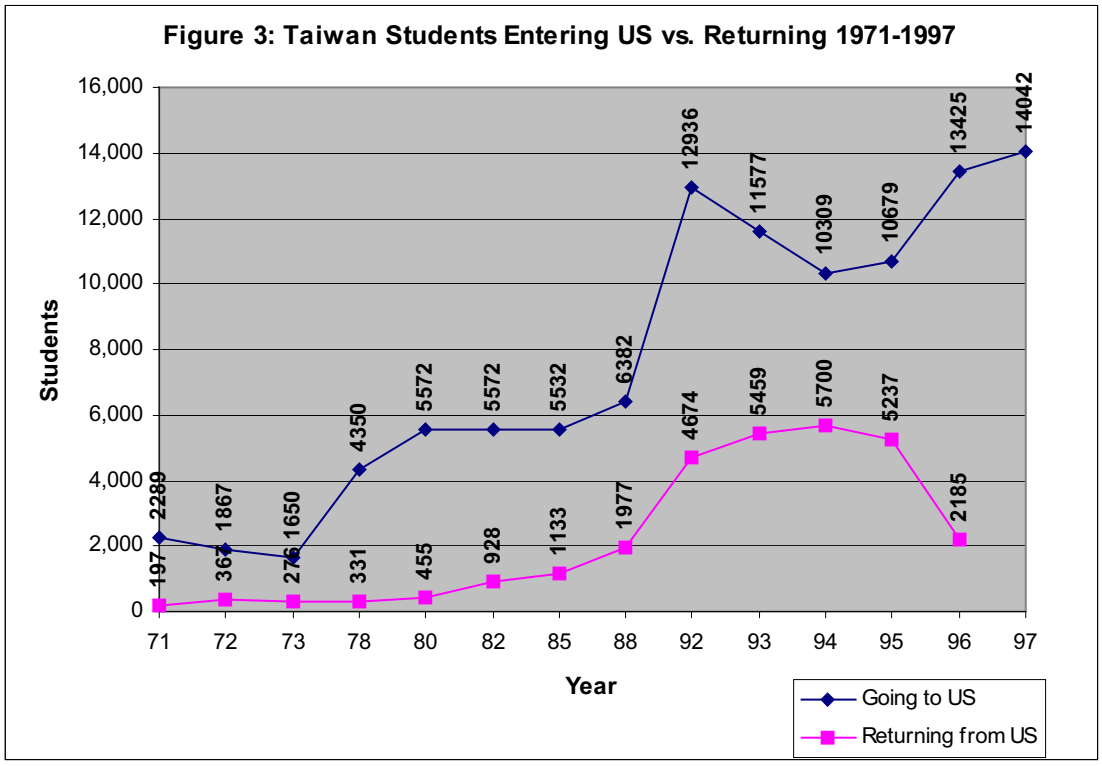
Table 3: Asian Foreign Students Earning Doctoral S&E Degrees in 1992-1993 Who were Working in the United States in 1997, by Country

Country of Origin	Foreign Doctoral Recipients	Percent (%) Working in US in 1997
S&E Fields, Total	16,391	53%
Taiwan	2,149	36%
Korea	2,056	9%
China (PRC)	4,010	92%
Japan	214	21%
India	1,549	83%

Source: JOHNSON Jean, "Collaboration in S&T Information Exchange between the United States and China", paper presented at CIES 2000 Conference, San Antonio, Texas, March 7-11, 2000.

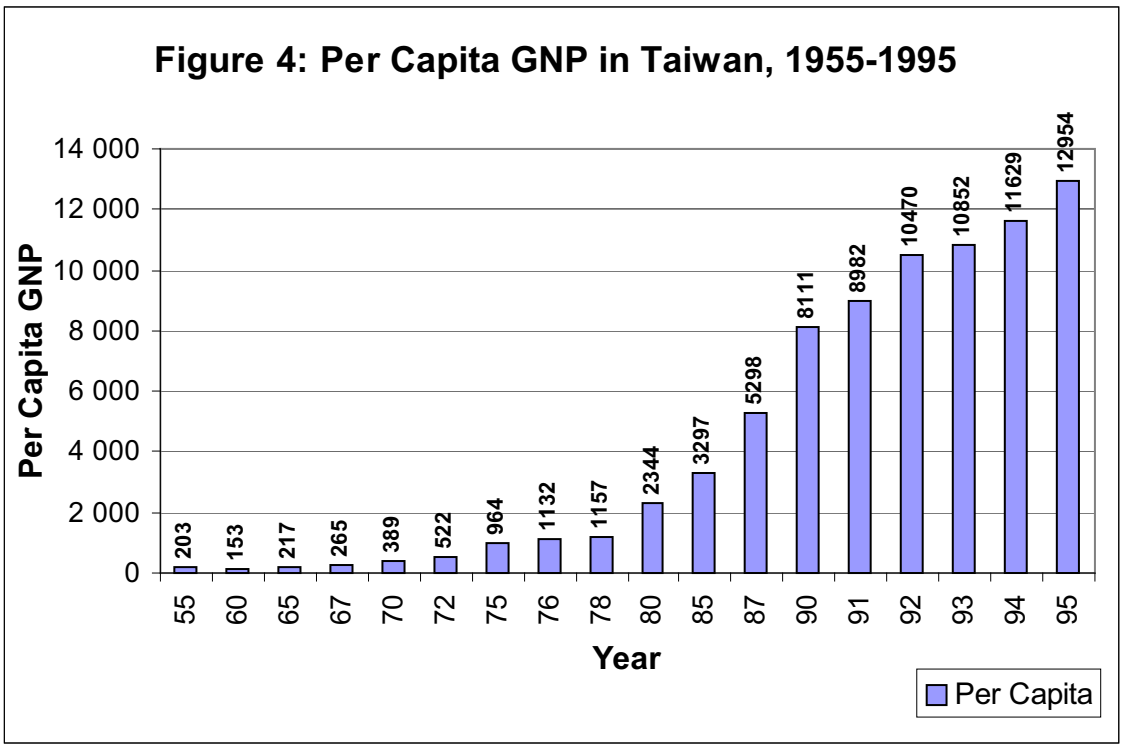
About 53 percent of the foreign students who earned S&E doctoral degrees in 1992 and 1993 were working in the United States in 1997. Stay rates differ by field of the degree and country of origin, however. The large majority of 1992 and 1993 engineering doctoral recipients from India (90 percent) and China (97 percent) were working in the United States in 1997. In contrast, only 9 percent of South Koreans who completed engineering doctorates from U.S. universities in 1992 and 1993 were working in the United States in 1997.

Figure 3 shows the historical trends of Taiwan students entering and leaving the USA in the period between 1971 and 1997. Until the 1990s, Taiwan had suffered a serious brain drain for almost forty years. It was reported that between 1950 and 1980 the Ministry of Education issued approvals to 63,061 college graduates to study abroad, but only 7,240 of them returned. During this period, the brain drain from students not returning from study abroad reached a high of 90 percent. The brain drain slowed gradually in the 1980s: it decreased to 80 percent between 1981 and 1987.



Sources: 1). Ministry of Education, *Educational Statistics of the ROC*, 1997, p. 54, 56-57, 60. 2.) LI Chen-ching, "Returning Home after Studying in the USA: Reverse Brain Drain in Taiwan", *Cultural & Educational Digest*, 1995a, p. 20-24. 3). *Cultural & Educational Digest*, Cultural Division of Taipei Economic and Cultural Representative Office in the United States, June 1998, p. 11.

However, it was only at the end of 1980s that Taiwan started to benefit from its international students and their connection. A return flow of American-trained scientists and engineers occurred in the past 10-odd years. There are a number of societal variables that appear to account for this change. The most important variable is the economy. The statistics in Figures 3 and 4 show a close correlation between economic development and the return flow. The strong increase of per capita GNP since the late 1980s put Taiwan join in the group of newly industrializing economies (NIEs). Rapid economic development has offered a great number of job opportunities for returning students with advanced degrees and professional expertise. The nationwide "Ten Construction Project" infrastructure development, together with the establishment of the Hsinchu Science-based Industrial Park in 1980, opened many new avenues for young returned students to start new challenging careers. According to the 1994 Annual Report of the Science-based Industrial Park, 1.05% of the employees hold Ph.D. degrees, 10.08% have masters degrees, and 17.92% of them have bachelor degrees. Of the total 34,564 employees hired to work in the Science-based Industrial Park, a large number of junior professionals were from the United States.



Source: LI Chen-ching, "Returning Home after Studying in the USA: Reverse Brain Drain in Taiwan", in *Cultural & Educational Digest*, Cultural Division of Taipei Economic and Cultural Representative Office in the United States, 1995a, p. 20-24.

However, after 1995, the number of returning students dropped sharply to 2,185 in 1996. The reasons for this decline in returning students seem complex. There are four possible explanations. First, the job market in Taiwan for returning students is not as robust as it was before 1992. The returnees had to compete for fewer jobs. Second, the economy in America steadily improved in late 1990s, providing more job opportunities. Third, but not necessarily least, is that the decline could be attributed to the military crisis on the Taiwan Strait in 1995 and1996. Fourth, worse still, the Asian financial crisis in 1997 aggravated this decline. According to recent report that it seems that Taiwan is experienced a brain drain again – this time to mainland China, specifically Suzhou and Shanghai.

What are the implications of the Taiwan case for mainland China? What inspiration will mainland China draw from Taiwan's experience? Actually, there is a distinct change in the rate of Chinese students planning to remain and return in the past 6 years. In contrast to the high percentage of Chinese students planning to remain in the United States in the period between early and mid-1990s (See Table 2), a study made in 1999 shows the counter trends (Wang,

2001). According to the study, the percentage of Chinese students in the United States planning to return increased: of the 1,045 Chinese students questioned, 21.2 percent had plan to go home within 5 years, 36.5 percent had plans to go home within 5-10 years, 22.9 percent had plans to go home after 10 years, only 19.4 percent had plans to remain. In the contrast, over 80 percent had plans to return in the future. This is a very encouraging progress for China.

Currently, China has a per capita GNP of about US$850, and a number of foreign-educated Chinese students have already returned home. According to official reports, from 1990 to 1998, the returnees increased by 13 percent each year, from 1,593 in 1990 to 7,397 in 1998 (Newsweekly, July 31, 2000). According to Mr John Pomfret, Bureau Chief of the Washington Post in Beijing, in 2000, 13,000 overseas Chinese students were expected to come back (Pomfret, Oct. 16, 2000).

If China continues to reform its economic structure, relying on scientific and technological progress in its transition to a market economy, the demand for high-level specialized personnel will be high. Considering the special circumstances of China: vast land, rich resources, large population as well as uneven development level from region to region, it seems likely that**,** when China has a per capita GNP of about US$1,500-2,000, China will turn brain drain to brain gain and benefit from the reverse flow of overseas Chinese students and scholars. However, to turn this possibility into a reality should be accompanied with the enhancement of political environment and improvement of the legal system.

Good Alternative: to Join in International Brain Circulation

In 1996, the Chinese government strategy started to shift from concentrating on the return of overseas Chinese students and professionals, as well as blocking the outflow of scholars and students, to tolerating their migration, optimizing their contributions and improving the home environment (Cao, 1996). A new policy of 'supporting study-abroad, encouraging return, free movement in and out of the country' was introduced as early as in 1992 and the government made a clear connection between supporting study-abroad and the nation's strategic development in the 21st century. This new policy represents the most relaxed policy on study-abroad in China since 1978 and, to some extent, encourages China's high-level specialized personnel to join the international brain circulation. This is demonstrated in several ways, including the following:

Reform in Overseas Study Policies

In 1996, the State Overseas Study Foundation was established to select and sponsor qualified scholars nationwide for overseas study. Most of them are visiting scholars and the length of stay is usually one year. Each candidate has to sign a contract with the Foundation, along with a guarantor. If the candidate fails to return on schedule, the guarantor has to encourage the candidate to return, or pay fines stipulated in the contract. In 1998 alone, 1,709 scholars were selected and sponsored for overseas study. The data show that the return ratio of those sponsored by the Foundation since 1996 is 85.7 percent. All those who remained have paid off the fines (Chisa Website, Sept. 15, 1998). According to a recent report, in 1999, 1,750 scholars were sponsored and sent to 42 countries for study and there were plans for 2,300 more to be selected and sponsored in 2000 (Sohu Website, Jan. 25, 2000).

New Policies on Absorbing Talents

Since 1992 on, many government agencies, educational and research institutions and organizations in China formed career delegations and visited the USA, Britain, Germany, Japan and other developed countries to recruit overseas Chinese students and professionals. Since then, an increasing number of Chinese students and professionals are going back to China for either long-term work assignments or short-term academic and business visits. For example, between 1993 and 1999, more than 20,000 overseas Chinese students and scholars made such visits. From France alone, 65 Ph.Ds. returned to China in 1994. From 1995 to 1998, the returnees increased by 13 percent each year. In 1998 alone, 7,400-odd returned[3].

[3] http://202.84.17.76:3000/xfznp/htm/xfss0159.c16.htm

Since 1998, four "Conventions of Overseas Chinese Scholars in Science and Technology" were successively held jointly by the Ministry of Education, the Ministry of Science and Technology, the Ministry of Personnel and the Guangzhou Municipal Government in Guangzhou. More than 2,600 foreign-educated Chinese students and professionals (60 percent have doctoral degree) from 29 countries attended the "2001 Convention" held in Guangzhou from 28-30 of December 2001. These overseas experts brought and presented over 2,200 projects and patents at the Convention for cooperation and investment[4].

One report from Beijing was that, on February 5, 2001, in an effort to improve the international competitive capacity of China and to meet the needs for China's entry into the World Trade Organization (WTO), with approval from the CPC Central Committee and the PRC State Council, the Ministry of Personnel published "the Opinion on Encouraging High-Level Overseas Chinese Students to Return to Work in China". This was designed to attract and encourage, in an organized and planned way, high-level overseas Chinese students to return and work in China. The Opinion emphases attracting high-level overseas Chinese students who have been working at foreign financial institutions, multi-national corporations, international organizations and famous universities and research institutes and to establish a competitive incentive mechanism accordingly (People's Daily, February 6, 2001).

Many local governments in China also have established special policies to attract overseas Chinese students. It was reported in January 2002 that China had so far built more than 60 Pioneering Parks for Overseas Chinese Students, which are scattered in big and mid-sized cities around countries. About 4,000 returnees started their business in these hi-tech parks with the total revenue over RMB10 billion (US$2.5 billion)[5].

Taking Shanghai alone, according to a recent report as of March 2002, over 25,000 students have returned. This number is one fifth of all returnees in China. In addition, several thousands of overseas Chinese scholars have arranged business visits with the municipal government, and 1,300 have registered and opened their businesses, half of the total business companies opened by the returnees in China. Most of these represent 'hi-tech' companies and consulting firms[6]. The second largest pool of the returned overseas students is Beijing. In the past two years, more than 3,000 students have selected Zhongguangcun Hi-Tech Development Park in Beijing as the place for their business development[7].

With their newly acquired knowledge and expertise, these returned students and scholars have been playing key roles in China's higher education, scientific research and production management. As reported in 1999, they include:

1) 507 out of 629 academicians of the Chinese Academy of Sciences, 80.6% of the total;

2) 227 out of 423 academicians of the Chinese Academy of Engineering, 53.7% of the total;

3) 2/3 of the award winners "Cross-Century Excellent Talents Program" set up by the Ministry of Education;

4) More than half of the research leaders of the "Hundred, Thousand and Ten Thousand Talents Program" sponsored by the Ministry of Personnel, the "China National Yong Scientists Award" funded by China's Communist Youth League; the "Hundred Talents Program" set up by the Chinese Academy of Sciences; the "State Outstanding Youth Scientific Funds" funded by the Natural Science Foundation of China; the "863 Hi-Technology Research and Development Project" funded by the Ministry of Science and Technology.

On April 23, 2002, China's State Council made an important appointment: appointed Dr Zhou Ji to the position of First Vice Minister of Education. Dr Zhou graduated from the State University of New York at Buffalo where the author earned his Ph.D., too (china.com, April 24, 2002). At present, the majority of presidents and vice presidents of universities and colleges have overseas experience. According to the latest report that the Ministry of Education

[4] http://edu.china.com/zh_cn/1055/20020103/10184391.html (1/3/02)
[5] http://edu.china.com/zh_cn/1055/20020103/10184391.html (1/3/02)
[6] http://news.china.com/zh_cn/domestic/945/20020311/10223291.html (3/11/02)
[7] http://www.chisa.edu.cn/week/483/483_30_4696.asp (4/29/02)

appointed new secretary of the CPC Committee and new president of China Agricultural University on April 29, 2002, both of them are returned American-educated students[8].

Over 80% of university academic backbones, chairpersons and directors of national key laboratories (Ministry of Education, August 1999).

By the end of 1998, 80% of the returned staff in the Chinese Academy of Sciences had been granted domestic awards and patents or had their papers published in first-class academic journals both at home and abroad. These returned staff undertook or chaired 9,395 research projects, of which 1,383 were national priority projects and 2,538 dedicated ones defined by the Natural Science Foundation of China (*China Science and Technology Newsletter*, No. 205, November 20, 1999, p. 1-2).

Acceptance of Foreign Students for Study in China

From 1978 to 2001, more than 350,000 foreign students came from over 160 countries and regions to China for study at different levels, including baccalaureate, masters and doctoral programs as well as short-term programs. In 2001 alone, over 50,000 foreign students, 41. 7 times as much as the figure (1,200) in 1978, were studying in China[9]. Of the 4,569 foreign students sponsored by Chinese government in 1997, 4.9 percent were enrolled in doctoral programs, 14.5 percent in master degree programs, and 33 percent in bachelor degree programs. In addition, in the same year, there were 39,035 self-financed, of which 2 percent were pursuing doctoral degrees, 4.6 percent master's degrees, 28 percent bachelor's degrees, and 0.3 percent short-term diplomas (Chisa website, June 5, 1998).

Other than the foreign students studying in China, there are also growing students from overseas regions of Hong Kong, Macao and Taiwan coming to study in mainland China. During the ten-year period from 1988 to 1997, 403 students from these three regions were enrolled in Chinese universities. Most of them were graduate students (Chisa website, June 5, 1998). The recent tendency shows more students from Taiwan come to mainland China to pursue advanced studies. In 2001, 1,078 Taiwanese students were enrolled in mainland Chinese universities. This year, the applicants for graduate studies is doubled than those of last year, reaching 1,369[10].

Importation of Foreign Talents and Exportation of Home

Talents

During the last two decades of opening and reform, China had invited foreign experts a total of 662,000 times on a cumulative basis and dispatched professionals and management people a total of 300,000 times to be trained abroad. In the period of 1997 and 1998, the intelligence import ranked the largest in the history of the country by inviting foreign experts of 170,000 person/time and sending out trainees of 80,000 person/times (*China Science and Technology Newsletter*, No. 178, February 20, 1999, p. 6). It was reported that more than 60,000 foreign experts are currently working in China[11].

The Chinese Academy of Sciences (CAS) has already invited more than 30 overseas experts from North America and Europe to become science advisors, and is planning to expand such cooperation. The CAS will attract overseas scientists who wish to work in China for an extended period of time, as well as those who can only come on a short-term basis. The academy will also invite overseas scholars as senior visiting scholars and help them establish research groups and laboratories in China[12].

In addition to foreign talent importation, there is also domestic talent exportation. In 1996, about 7,000 Chinese teachers and experts working in various fields were sent abroad to teach or to give short-term lectures. During the period of 1978 to 1997, the cumulative number of Chinese scholars going abroad to attend international conferences and the cumulative number

[8] http://www.chisa.edu.cn/week/483/483_30_4733.asp (4/29/02)
[9] http://edu.china.com/zh_cn/1055/20020103/10184476.html (1/3/02)
[10] http://www.chineseworld.com/publish/today/11_0900.4w/m/4wms(020415)13_tb.htm (4/14/02)
[11] http://www1.chinesenewsnet.com/cgi-bin/newsfetch.cgi?unidoc=big5&src=SinoNews/Mainland (3/1/02)
[12] http://www.networkchinese.com/chineseprof/policy/overseas.html (4/22/02)

of foreign participants coming to China to attend international conferences hosted by Chinese institutions both exceeded 11,000 (Liu, 1998).

Mushroom Growth of Preferential Programs for Talents Absorption and Nurturing

Aiming at establishing an integrated system of attracting and nurturing great talents, the Chinese government has been setting up China's nationwide talents absorption and nurturing system which is made up of various favored programs. Of them, the following two are the most important:

Yangtze River Scholars Award Program was co-founded in 1998 by Ministry of Finance and patriotic industrialist Li Jiacheng from Hong Kong and implemented by Ministry of Education. The Program is aimed at absorbing, selecting, nurturing and turning out high level and creative young and middle aged talents from both at home and abroad. Up to the 2000, the Ministry of Education has created special professor positions with the offer of salary over RMB100,000 ($12,500) plus other benefits in 689 disciplines at 114 higher learning institutions. 412 professors recruited under the program have started their work after signing contracts with their 69 parent schools. Of these special professors, about 400, 97% of the total, are either returned overseas students or have overseas experience. 26 of them hold foreign citizenships. In this Program, the Ministry of Education will create 500 to 1000 special professor positions in the nation's higher learning institutions within 3 to 5 years. Other than the special professorship, 12 universities appointed 33 lectureship professors, all of them returned from abroad[13].

Hundred, Thousand and Ten Thousand Talents Program is a senior talent nurturing initiative sponsored in December, 1995 by the Ministry of Personnel, the Ministry of Science and Technology, the Ministry of Education, the Ministry of Finance, the State Planning Commission, the China Science and Technology Association and the China National Natural Science Foundation. The Program is aimed at selecting and promoting from both home and abroad highly talented scientists. These include a hundred outstanding young scientists of major influence in world scientific community, ranking in the frontiers of world science and technology; a thousand academic or technical leaders of a domestically advanced level and disciplinary superiority; and ten thousands candidates for academic or technical leaders, playing backbone or core roles in their disciplines. It is reported that the Program has by May 1999, selected 1,077 candidates, many of whom are advisors for doctorate students, experts enjoying special governmental subsidies or young and middle aged scientists who have achieved outstanding results (*China Science and Technology Newsletter*, No. 188, May 30, 1999, p. 2-3).

In and Out China's Education Market

In recent years, the Chinese government has provided foreign colleges and universities with the opportunities for recruiting students directly in China. Starting from 1999, China has held a series of international education exhibitions and fairs, which aim at promoting education exchanges and joint-sponsorship of higher learning institutions between China and other countries. For example, in early 1999, the Chinese Service Center for Scholarly Exchange hosted in Beijing the first international education exhibition, which attracted over 10 foreign colleges and universities of 16 countries. However, in 2000, a larger number of foreign universities took part in China's international education exhibitions. From 26 to 27 of February, "The 2000 British Education Exhibition" with nearly 100 British universities was held in Beijing, at the same time, "The China 2000 International Education Exhibition" was held from February 26 to March 12 in five Chinese cities including Beijing, Shanghai, Chengdu, Xian and Wuhan. Over 160 universities from 18 countries including the United States, the United Kingdom, Canada, France, Germany, Netherlands, Australia, New Zealand, and South Africa participated[14]. From 17 to 20 of March, 2000, "The First American Education Exhibition" was held respectively in Shanghai and Beijing. Thirty-one universities including Dartmouth College,

[13] . http://www.china.org.cn/chinese/EDU-c/137624.htm (4/24/02) and http://www5.chinesenewsnet.com/cgi-bin/newsfetch.cgi?unidoc=big5&src=SocDigest/Technology/cna-181050.html (4/24/02)

[14] http://english.china.com/cdc/en/news/0,1073,7542-100001,00.html

University of Maryland, Georgetown University, and Boston University took part. "The Australian Education Exhibition" was held in Beijing and Shanghai in April, 2000 and another international education exhibition was held in Changchun[15]. The latest event of this kind was the "China International Higher Education Exhibition Tour 2001" which was hosted by the Chinese Service Center for Scholarly Exchange in five big cities from February 17 to March 4, 2001. Over 160 foreign universities and educational institutions from 22 countries participated in this tour (china.com, February 18, 2001). "The 2002 China's International Educational Cooperation Week" which is going to be held in September will attract over 100 foreign educational institutions and organizations including Ivy League, ETS, US Departments of Education and Commerce, etc.[16]

All these shows have increased interest among Chinese students and their parents for study abroad. In 1999, the UK Embassy in China alone issued over 8,000 student visas, increased by 60 percent as issued in 1998. It was reported that 10,000 Chinese students are now enrolled in the UK universities, increased by four times in the last three years of 1999-2001[17].

Not only opening domestic education market to the outsiders, China has in recent years also taken an active part in international cooperation as well as competition for international students. In December of 1999, a group of Chinese educators was sent to Japan to hold the "Chinese Education Exhibition". In December 2000, one larger group consisting of 58 educators from 39 universities went to South Korea to hold the "Chinese Education Exhibition"(World Journal, December 19, 2000). As late as May, 2002, a number of Chinese universities attended the NAFSA 54th Annual Conference held in San Antonio, Texas with their booths set up in the hope to attract more American students to study in China. These events help recruit more international students as well as promote Chinese education.

Jointly-run Institutions

In addition to the international exchanges, some forms of international cooperation also took shape. Many Chinese colleges and universities seek foreign partners to improve their educational and research quality and upgrade their education level as well. An example of inter-institutional collaboration is the Nanjing-Johns Hopkins Center for Chinese and American Studies. Opened in the fall of 1986, it is jointly run by Nanjing University of China and Johns Hopkins University of the United States. The Center offered a two-semester, graduate-level curriculum in culture, economics, politics, foreign policy, international relations and law, modern history and U. S. -China relations. The American and international students made up half of the total student body while the Chinese students made up the other half. At present, about 100 students are enrolled in the center each year. To date, about 1,000 students graduated from the center. The author's personal experience in meeting American graduates from this Center has been that they represent substantial expertise on Chinese affairs and make contributions to the promotion of mutual understanding and friendship between China and America.

As early as 1993, some Chinese top universities such as Beijing University, Shanghai Jiaotong University and Nanjing University started to offer three-year Chinese Master of Business Administration programs for Mandarin-speaking managers in Singapore, first, then Malaysia. Xiamen University started to offer a six-year degree correspondence course in Chinese language and literature in Singapore in 1994, in collaboration with local institutions. This is the first time that Chinese universities have offered Chinese degrees to individuals outside China (Straits Times Weekly Edition, 1994). A latest news came from Singapore on June 9, 2002 that Shanghai Jiaotong University will open a school for graduate education in Singapore early next year (China Media Net, 6/9/02).

Flow Back Through the Global Economy Circulation

The last but not the least is a new trend that, with growing foreign investment being made by multi-national companies in R&D research and development centers or laboratories in

[15] http://news.sohu.com/20000223/100015.html
[16] http://www.china.org.cn/chinese/EDU-c/164951.htm (6/26/02)
[17] http://www.wenxuecity.com/BBSview.asp?SubID=newsdirect&MsgID=9040 (2/5/02)

China, more and more overseas Chinese professionals have been recruited back to work in China. According to the report from China in December 1999 that with the globalization of the world economy, major multi-national companies have been extending their investment in activities from manufacturing to training, research and development. The new trend is to set up their own research and development centers in China. For example, Canadian Nortel invested in its North Telecommunication Research and Development Center in Beijing in 1994, IBM opened its IBM (China) Research Center in Beijing in 1995. Since 1996, the following multi-national companies such as Intel, Sun Microsystems, P&G, DuPont, Nokia, Ericcson, Motorola and Sonny have successively established their own research and development centers and laboratories in China. The French Rhone-Poulenc Rorer has recently made an ambitious plan of building its own technology parks in Beijing and Shanghai, which includes a hi-tech silicon steel plant, four chemical laboratories and a business executive building. The more exciting news was that Intel declared in May 1998 that it would make an investment of $50 million in establishing the Intel research and development institute in Shanghai within the next five years while Microsoft set up the Microsoft-China Research Institute in Beijing in the end of 1998 and it would also make an investment of $80 million in the institute within the next six years to attract up to 100 scientists (*World Journal*, November 29, 1999). These foreign R&D institutes or centers might differ in terms of size and type, but they bear the same characteristics: almost all of their employees are Chinese researchers and many of them have overseas experience. For example, Microsoft China Research Institute has at present 60 staff members. Among its senior research staff, 11 are from overseas. By November of 1999, Motorola had established 18 R&D institutes in different parts of China with a total staff of 650 and a large number of them were recruited and sent from abroad (*China Science and Technology Newsletter*, No. 205, November 20, 1999, p. 2).

With China's accession into the WTO in December of 2001, more and more foreign companies will strive to open and expand their business, especially in hi-tech and professional areas in China. I am sure that, together with the new wave of foreign investment, the reverse-flow of foreign-trained Chinese scholars and professionals will increase.

As mentioned above, China has in recent years started to join in the international brain circulation, but the scale is still limited in comparison with some other countries and regions. There is still a long way for China to go. However, to join in the international brain circulation is inevitably a good alternative.

Case Study at Micro-Level

The previous part of this paper lay out the macro situation of overseas study and the contributions made by the overseas Chinese students and professionals to bridging China and America in the areas of science, economy and education and to promoting Chinese national modernization. This part will make a micro investigation on a network of Chinese intellectual diasporas – the Chinese Association for Science and Technology, USA (CAST-USA)[18].

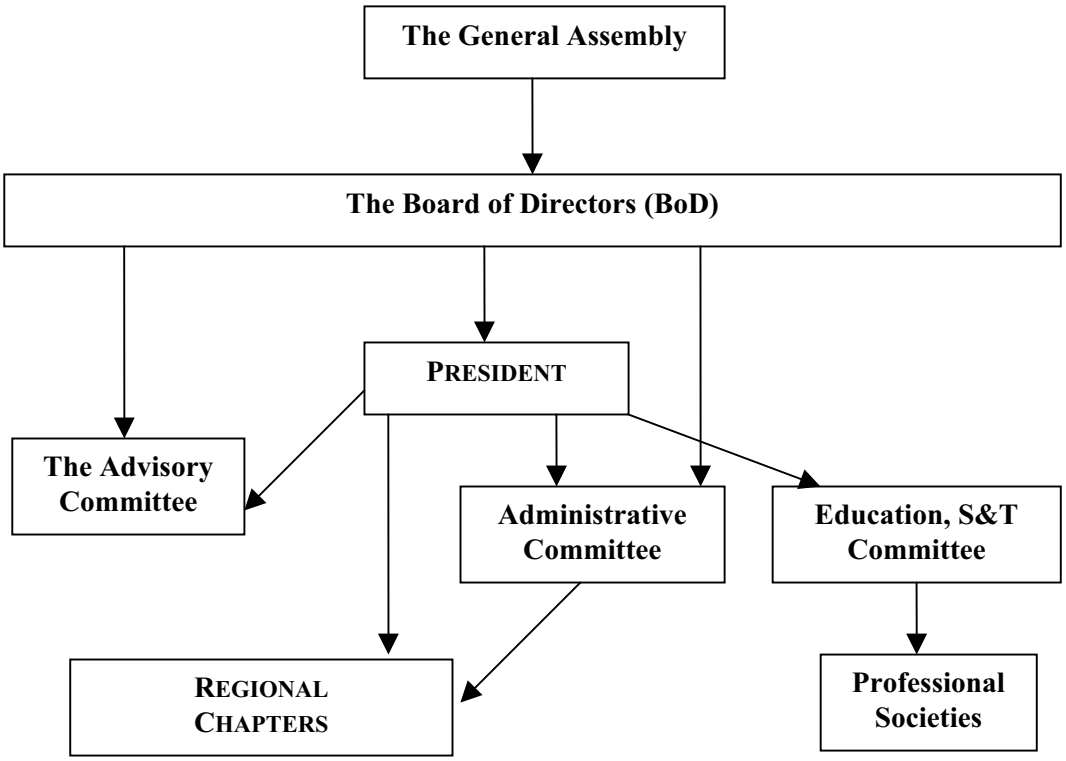
As described above, over the past 10-odd years, with growing Chinese students and professionals remained and settled down in the United States, they have formed numerous academic and professionals associations and social unions in the United States in the hope of providing channels through which to establish and strengthen the relationship between Chinese students and scholars here in the US, corresponding institutions and scholars in the international academic community, and particularly their colleagues back in China. Among those organizations and societies are: the Chinese Association for Science and Technology-USA (CAST-USA), the Association of Chinese Scientists and Engineers-USA (ACSE), the Chinese Economists Society (CES), the Association of Chinese Professors of Social Sciences in the United States (ICPSS) and so on. These networks differ in size: from a few of hundred members to a few of thousand members and in level: from nationwide to regional. However, they bear similar nature and missions: To promote professional development and communications among

[18] Most of the information on the CAST-USA is cited and summarized from the CAST-USA Website: http://www.castusa.org.

members, help members integrate themselves into the host society and promote exchanges between China and America.

There are two reasons that the author of this paper take the CAST-USA as a case study: firstly, the CAST-USA is one of the largest and most prestigious Chinese intellectual networks in the United States; secondly, the author of this paper is currently serving as its BoD member and Vice President of CAST-Washington, DC Chapter. The position in the CAST may provide the author with a relatively easy access to its data. The methods used for collecting data include interviews, archives and document analysis, and the CAST-USA website review.

Chart I. Organizational Structure of the CAST-USA



Characteristics

The Chinese Association for Science and Technology, USA (CAST-USA) is a nation-wide organization by, of and for the Chinese-American scientists and professionals headquartered in New York, USA. It is a non-governmental organization, which was registered in New York State in 1992 as a non-political, non-profit organization. While interviewed on April 14, 2002, Dr Huankang Zhou, one of the founders and first president of the CAST-USA, told a brief story about the origins of the CAST-USA. Dr Zhou said, he and other 2 people first initiated the network in March 1992 when two historical events occurred in both America and China. The first event was that the former President Bush issued the Chinese Student Protection Act, which provided an opportunity for the overseas Chinese students and professionals to extend their stay in the United States; the second event was that the late Chinese top leader Deng Xiaoping made his major speeches during his inspection tour of south China led to the second, but much deeper, wave of national reform in China. Under such special circumstances they considered it was imperative to create a network to tie the non-returned to each other and promote communications and academic exchanges between them, and build a "bridge" between America and China. The first meeting of the preparation committee was held in Columbia University in May, 1992. More than 50 people attended this meeting and they basically agreed on the name, mission, structure, qualification and other rules and regulations of the forth coming CAST-USA. The CAST-USA was officially founded in New York City in August 1992 and more than 500 people attended the ceremony. Among those who sent congratulatory letters were

the China Association for International Exchange of Personnel, Chinese Consulate in New York, Nobel Laureates, US senators, members of House Representatives and other VIPs both in America and China. The founding ceremony was very successful and a few of news media reported this historical event.

The missions of the CAST-USA are to promote academic exchanges and professional development of its members; to serve as a "bridge" between the United States and China for both personnel and information exchange, and for the cooperation in science and technology, economy, trade and other areas; to promote friendships and communications among members and to enhance greater understanding of Chinese traditional culture in the United States. All activities are in conformity with the local, state and federal regulations. The majority of its members are professionals with advanced degrees in science and technology, education, social sciences, business, law, medicine, art and other fields of endeavor as well as other professionals and students.

Organization Structure

The CAST-USA is a professional organization with local chapters and professional societies across the USA. Chart I illustrates its organizational structure.

The General Assembly is the highest authority in the association. The Assembly convenes at least once a year to elect members of the Board of Directors; to decide upon the policies and major activities of the Association; and to propose and approve amendments to the bylaws. A special Assembly meeting could be held upon request from over fifty percent of the Association's members or two-third of the Board of Directors.

The Board of Directors is the highest executive body in the Association. Its primary responsibility is to implement the policies and bylaws of the Association. Members are eligible for the new Board of Directors if they are active members for at least one year and meet one of the following requirements:

1) current member of the Board of Directors running for re-election or
2) nominated by 20 or more current members of the Association or
3) nominated by 3 and more members of the Board of Directors or
4) recommended by a local chapter or professional society.

The directors are each serving a three-year term, and may be re-elected but is limited to a maximum of two consecutive terms. Under certain circumstances and with an approval by two-third of the Board of Directors, a director may be removed from or added to the Board; however, the total number of new additions and removal should be limited to less than one-fourth of the total number of current board of directors.

The Association's President is elected to serve a one-year term by the Board. The President can be re-elected but is limited to a maximum of two consecutive terms. The Association's Vice-presidents are named by the President with the approval of the Board. Under certain circumstances and with approvals from two-third of the Board of Directors and via a special Assembly meeting, the Association's President and Vice-president can be removed.

The Association may set up Administrative Committees to carry out various activities. The establishment and composition of an Administrative Committee are determined by the Board of Directors in accordance with the objectives of the Association. The Association's President oversees all Administrative Committees' activities. Administrative Committees are comprised of various departments.

The Association establishes various professional societies to meet the needs of members' interests, research and development objectives. Each professional society is operated independently from the professional subject point of view. The Education Science and Technology Committee is chartered to promote collaborations among the Association's professional societies and external professional organizations. At present, there are 11 nationwide professional societies across U.S. Continent. They are: CAST Electronics and Information Technology Society, CAST Chemical Professionals Society, CAST Bio-technology & Pharmaceutical Society, CAST Engineering Society, CAST Chinese Medicine Society, CAST e-Business Society, CAST Network Society, CAST Entrepreneur Society, CAST New

Media Society, CAST Human Social Engineering Society, and CAST Agricultural Science Society.

The Association also establishes regional chapters, which serve the interests of a segment of the Chinese American community through a local presence, primarily focus on local issues and developments. CAST-USA's local chapters that currently exist and are under development include 11: Greater New York Chapter (New York, New Jersey), Washington Chapter (DC, Maryland), California Chapter (LA, San Diego, Silicon Valley), Pennsylvania Chapter (Pittsburgh), Utah Chapter (Salt Lake City), Connecticut Chapter, Texas Chapter (Houston, Dallas), North Carolina Chapter (Triangle Research Park), Indiana Chapter, Virginia Chapter, Arizona Chapter, and Nevada Chapter. A couple more chapters are in preparation process.

The Honorary Advisors and the Advisory Committee function as coordinator, consultant and supervisor to the directors' activities. The advisors are highly accomplished, experienced professionals in their respective fields, and are nominated and approved by the Board of Directors. At present, there are more than 30 advisors including 2 Nobel Prize winners Chen Nin Yang and Yuan-Tseh Lee, and Yongxiang Lu, President of the Chinese Academy of Sciences.

By establishing various professional societies and regional chapters under its leadership the CAST-USA makes itself unique to most other overseas Chinese organizations and it works like an umbrella group of Chinese professionals in the United States. As Chaoxiang Kong, Vice President of the CAST-USA, calls his association as a society of societies. It is a network akin to that of a giant oak tree having one trunk and spreading out into various branches. The CAST-USA and some of its chapters and professional societies created their own websites, which post the general information of both association and its individual chapters and professional societies including its by-laws, overview, news and announcements, research projects, past and future activities and events, career opportunities and so on. Their discussion forums are open to all the members. The forum topics range extensively from science, technology, education, culture and economy to the relations as well as the cooperation and exchanges between America and China. Other than the websites, the CAST-USA created an electronic mailing list for its Board of Directors, who, via the electronic e-mail network, communicate and discuss important issues and exchange daily work. If necessary, the Board of Directors will hold the tele-conferences over the IP. Individual regional chapters and professional societies also created their own electronic mailing lists for their Board of Directors and members so as to provide information and help communicate among their members. With the help of these hi-tech electronic channels, every member can easily reach others and be reached by others. By using these multi-dimensional communication tools plus its numerous activities, annual meetings and its newsletter *CAST Communications* and quarterly magazine *Trade Wind*[19], the CAST-USA is able to keep its scattered members well informed of the Association's development and make them linked and tied to each other.

Membership Qualification, Privileges and Obligations

Any professional who resides in the United States and upholds the CAST-USA by-laws, submits an application, pays the membership dues, and is approved by the Board of Directors may be a member. According to differences in due payable and other considerations, members are divided into five categories as follows:

Honorary Members – The association invites professionals who have achieved international recognition in the fields of education, science, technology, and business, to be honorary members. Honorary members are selected by the Board of Directors. Honorary Members do not need to pay membership fees.

[19]The newsletter *CAST Communications* is distributed to its members providing information and activities of common interests. The magazine *Trade Wind* started its first publication in 1994 and it discusses the common issues that CAST-USA members are concerned with, introduces outstanding Chinese professionals in the United States and reports on state-of-the-art development of science and technology. So far it has published 30 volumes plus a few of special issues.

1) Lifetime Members – Those individuals who pay the one-time lifetime membership fee are eligible to become lifetime members;

2) Regular Members –Regular members pay annual membership fees;

3) Student Members – Student members are currently enrolled in a college and pay annual student membership fees;

4) Corporate Members – Corporate members pay annual corporate membership fees.

The rights and privileges of all members are equal. A member has the right to participate all activities organized by the Association, the Association's regional chapters and professional societies. A member is entitled to all benefits and programs managed under the Association. Every member has the right to vote and to be elected. A member has the right to attend the meetings of the Association's Board of Directors and General Assembly.

A member is obligated to pay the Association's membership fee on-time, to obey and carry out the Association's By-laws and regulations and to participate and support the Association's activities and events.

With the approval of over two-third of the Board of Directors or the General Assembly, a member who is found guilty of violating the Association's bylaws and regulations will be issued a warning statement. The individual's membership will be revoked if serious damage is made to the association as a result of the violation.

Population Composition

In the past 10 years since it was established in 1992, the CAST-USA members has increased by about 6 times, from about 500 to over 3,000 scattered in more than 30 states and many big cities across America. The CAST-USA currently dose not have a nation-wide and unified member database. Though its individual regional chapters and professional societies have their own member databases, these databases are not inter-connected with each other. In addition, these databases are not standardized nor updated timely. After contacting many chapters and professional societies, the author obtained the following rough information. An overwhelming majority of its members came from mainland China in the past 20-odd years, a very small group came from Taiwan, Hong Kong, other Asian countries and regions and the ABC (American born Chinese). The CAST-USA features in several aspects: more professionals than students and their estimated ratio is 9:1; more male members than female members and their estimated ratio is: 7:3; more members in science and engineering than those in humanities and social sciences and their estimated ratio is: 8.5:1.5; more members with advanced degrees than those with undergraduate degrees and their estimated ratio is: 9:1; more members working in the business and science and technology sectors than those in other sectors and their exact ratio is un-known. From these numbers, we can clearly see that the CAST-USA is truly a highly qualified Chinese expatriate population in the United States. Most of them came to the United States to pursue their advanced studies and, after having earned degrees, they found jobs and brought their families here. After having settled down for several years, many of them became permanent residents or US citizens. The CAST-USA encourages its individual members to integrate themselves into the local mainstream community by participating in various events and social conventions. In recent presidential election and the legislative election at national, state and county levels, many individual members with citizenship joined Asian community in supporting given candidates to protect their own interests and rights. For example, in the 2000 US presidential election, many individual CAST-USA members participated in the activities organized by the 80/20 Asian Committee whose initiative led to forcing both Democratic presidential candidates to endorse its basic principles. The other example shows the growing important and powerful role of CAST-USA members in this area. In order to get support from individual CAST members for re-election, a representative of Maryland State House legislature actively participates in the activities held by the CAST-DC Chapter. There are also encouraging signs that some of CAST-USA members even planning to run for an election later in the future.

Activities

One of the main activities of the CAST-USA is to organize seminars and conferences in various professional areas and to organize exchange programs between the American and Chinese people. Since it was established, the CAST-USA, its individual chapters and professional societies have held numerous seminars and conferences. Helping its members blossom as professionals and entrepreneurs has been systematically done by CAST-USA through its rich and diverse offerings of seminars, workshops, roundtables, forums and conferences. Almost every week or during any given day of the season, each chapter or each society has an activity that provides exploration of and exchanges in scientific and technological ideas and new developments in these fields. These people-to-people, grassroots level activities are gathered in restaurants, college campuses, hotel function rooms or academic conference halls. In these settings, distinguished speakers and experts are invited either from an American academic or business institution or from the diplomatic and decision-making communities of China, both in official or private sectors (Andrei, 2002). For example, the CAST-DC Chapter held a Chinese Spring Festival Celebration in February 2002. The chairman of US Small Business Administration was invited to give her speech. Later in its April's seminar on intellectual property and trade mark, a US federal Court judge and a state representative of house legislature came to make their speeches. The most important events are CAST-USA's annual meetings, which usually were very successful and influential. For example, at the1993 annual meeting, Professor Cheng Ning Yang, Nobel laureate in physics, gave a key-note speech, at the 1994 annual meeting, Professor T.D. Lee, Nobel laureate in physics gave a key-note speech, at the 1998 annual meeting, Professor Yongxiang Lu, President of the Chinese Academy of Sciences, gave a key-note speech. The CAST-USA and its affiliated chapters and professional societies feels honored to have many other distinguished scientists, educators, statesmen, entrepreneurs and diplomatists be present and address at their conferences. All these activities promote the professional development, friendship and personal exchanges among the members and enhance greater understanding of Chinese traditional culture in the United States.

The CAST-USA encourages and supports its regional chapters, professional societies and individual members to conduct cooperative projects among members and with the counterparts in the home country. The CAST-USA's usual role in this respect is to help to post these information on the website and e-mail mailing list with the contact information so as to keep members well informed. If given members are interested or these projects fit their expertise, they will directly contact the parties in China. Then they can have further discussion, which might lead to a cooperative endeavor. To my knowledge, many members are involved in research projects with their counterparts in China and most of these cooperative projects are of technical nature and done by individual members themselves. There was an exceptional case that, as early as in the mid-1990s, Dr Qiyuan Ma, then former president of the CAST-USA, organized and coordinated collective work on a couple of projects focused on the issues of Chinese basic education and legal system with the relevant government agencies or departments in the home country. I predict, after China's accession into the WTO, this undertaking will be growing from time to time.

In addition to its internal activities, the CAST-USA maintains the policies open to outside. Its members actively take part in the various events co-organized jointly with the mainstream community in the United States. These events are too numerous to mention individually. I here just name a few. In 1999, the CAST Network Society together with the University of Maryland at College Park initiated Chinese – American Network Symposium, which is alternately held in the United States and China. Since 1999, this high-level symposium annually gathers networking experts from both the United States and China to discuss new ideas and advancements in networking technology. Among those distinguished guests were Doug Van Houweling, President and CEO of the University Corporation for Advanced Internet Development, Vinton G. Cerf, Senior Vice President of Internet Architecture and Technology for MCI WorldCom, widely known as a "Father of the Internet," Mianheng Jiang, Vice President of the Chinese Academy of Sciences. In 2001, to support Beijing's bid for hosting the 2008 Olympic Games, the CAST-USA joined in a group consisted of over 10 professional

organizations representing over 20, 000 professionals in the United States. By co-organizing different events, its members made their own contributions to this success. In December 2001, the CAST-USA co-organized jointly with the World Union VIP Enterprisers "the 21st Century US-China Economy Trade Technology Forum" in Washington, DC. The forum provided a channel of dialogue between 100 famous entrepreneurs both from the U.S. and China. Distinguished guest Paul T. Anastas, Officer of Science and Technology Policy, White House, was invited to give a speech.

The CAST-USA's numerous activities help its members promote both friendships and professional development. Many of its members made remarkable achievements in their respective fields. According to incomplete statistics, about 15 CAST-USA members were granted national and international awards including US Presidential Young Investigator, Presidential Young Fellow, NSF Research Initiation Award and Humboldt Research Award for US Senior Scientists, Alexander von Humboldt Foundation, Germany. These achievements demonstrate that the CAST-USA has truly become a highly skilled intellectual diasporas network. A number of news media including the China Press, the Singtao Daily, the Asian Fortune and the World Journal had frequent coverage on the CAST-USA, thus making it well-known to the community of science of both China and USA.

Interaction with Home Country

With China furthering its policies of reform and openness and accelerating its economic development, there is badly need for highly skilled professionals. As early as in mid-1990s, the Chinese government strategy started improving the home environment to attract overseas Chinese professionals back home, which result in a reverse flow of overseas Chinese professionals in recent years. Many CAST-USA members also participate in this reverse flow. This interaction is demonstrated in the following several ways.

It is estimated that, lured back by new opportunities in a rapidly changing country, over 100 members have so far returned China and they either launch their own business or take important positions in education, government, science, technology and other sectors in China. For example, Dr Taowen Le became Vice Managing Director of S&T Department of Liaoning Province by successfully passing an open competitive examination for public service; Dr Huaibei Zhou was appointed as Chairperson of Computer Science Department of Wuhan University, one of top research universities in China; Dr Tao Ni was appointed as CEO of a big company in Shanghai. More of the returned members opened their own business across the country. Dr Wenlin Huang opened his "Bio-Tech Port" in Shenzhen, which got a big contract of RMB 1 billion from relevant government agencies in 2001 (*The China Press*, October 27, 2001); Mr Li Chen jointly opened his joint company "Hi-Tech Chinese Network, Inc." in Guangzhou and his company was sponsored RMB 1 million by the Guangzhou Municipal Government.

Other than the physically returning, there are other two major ways of interaction. Since its founding in 1992, the CAST-USA, its individual chapters and societies have organized numerous delegations to China. These delegations either attend academic conferences and symposiums, or make on-the-spot observations on hi-tech development zones or Science and Technology Pioneer Pack for Overseas Chinese Professionals across the country. In December 2001, the CAST-USA organized a delegation of 80 members to attend the fourth "Conventions of Overseas Chinese Scholars in Science and Technology" held in Guangzhou. This delegation also co-sponsored an "Enterprise Project and Venture Capital Forum at the conference and many members gave their speeches. During the period of June and July 2001, the CAST-USA sponsored "Delegation of Technology Innovation in China". This 50-member delegation visited 8 cities and many hi-tech development zones and Science and Technology Pioneer Pack for Overseas Chinese Professionals. Through these visits and face-to-face discussion, many members found their research and business partners in China. With their newly acquired knowledge and expertise, these members play a certain role in Chinese economy, education and science. Many CAST-USA delegations were received by the leaders at different levels during their stay in China. The CAST-USA members who attended the Symposium on Nano-technology in Beijing last year were honored to be received by China's President Jiang Zemin.

Besides visiting China, the CAST-USA members also receive numerous delegations from China. These delegations come to the United States either for business, recruiting, exchanges, visit or training. The CAST-USA members help them contact different parties, organize conferences for personnel and technology exchanges, provide transportations and guidance for tour. Through this interaction, the members can find opportunities of business and research cooperation and build up their relationship network, thus, serving as a valuable bridge between the United States and China.

Conclusive Words

When we examine the Chinese overseas study from both historical and comparative perspectives, we can clearly see some common characteristics the five generations of overseas Chinese students bear: All of them have made great contributions to bridging the host countries and the home country and promoting the national modernization. However, the times today's fifth generation of overseas Chinese students live in totally differ from those the first four generations did. The fifth generation lives in the info-age and the age of globalization of economy. In addition, due to difference in culture and social and political systems between China and other countries, Chinese overseas students have unique features. From these differences derived different characteristics and historical missions of the fifth generation. What are the historical missions of the fifth generation of the overseas Chinese students? Their historical missions should not be confined to merely the reverse flow, the fifth generation including the CAST-USA members should help China eventually integrate into the international community through joining in the international brain circulation.

While looking back, many CAST-USA members are proud to say that, in the past 10 years since its foundation in 1992, the CAST-USA has been growing at a rapid pace with more than 3 thousand members in more than 30 states across the United States, working in universities, industries, government agencies and other sectors. "We are now blooming in America, from the east to west coast, as well as central and southern states in recent years", said Mr Kong, CAST-USA's vice president. The CAST-USA is now one of the most-recognized organizations among Chinese professionals in the United States and has established strong ties with the scientific and technological communities both in America and China. Its uniqueness lies in that the CAST-USA was initiated from the inside organization and this makes it possible for its members to learn how to independently run a professional organization.

While looking forward, as said by Dr Shuigen Xiao, immediate past president, that the CAST-USA has much to be improved. For example, we should establish and maintain a long-term cooperative relationship with more organizations and institutes both in America and China. With furthering expansion, the CAST-USA should also set up a physical office with full-time staff to take charge of daily work[20]. To do this needs budget. So the CAST-USA will seek more funds and donations from outside. Creating and maintaining a complete member database is also put on the agenda. This needs to set up unified standards and structure of the database and make the scattered databases of individual regional chapters connected to each other. Besides, the voice of paying more attention to the fields of humanities and social sciences is loudly heard. This will change the composition of membership, enhance the CAST-USA's image of strong S&T bias and add more human spirits. One important work which is in progress is that, at the request of the Board of Directors, a designated task team has been working on the current organization's by-law in the hope to greet the 10th anniversary of the founding of the CAST-USA late this year with a more comprehensive, more systematic and more professional new by-law. In a word, the CAST-USA members are confident of their future and success. As a highly skilled intellectual diasporas network, they will make further contributions to promoting academic exchanges and professional development of its members, serving as a bridge between the United States and China and promoting friendships and communications among its members.

[20] As the CAST-USA is a non-profit organization, it is funded primarily from membership dues. The CAST-USA, its regional chapters and professional societies are comprised of volunteer boards of directors and executive committees.

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